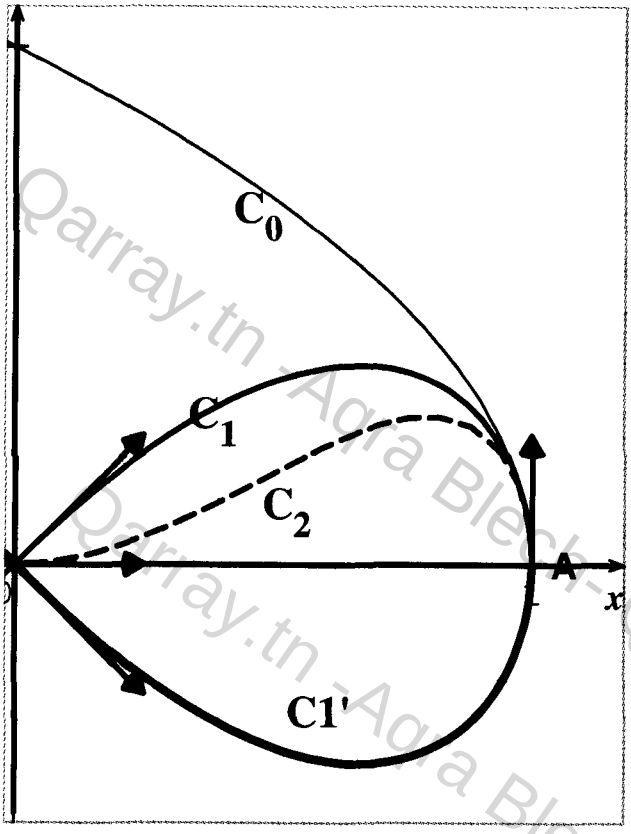
5° a/ on a pour tout $x \in [0,1]$

$$0 \leq 1-x \leq 1 \Rightarrow 0 \leq x^k\sqrt{1-x} \leq x^k$$

$$\text{D'où } 0 \leq I_k \leq \int_0^1 x^k\,dx = \frac{1}{k+1}$$

b/ on a : $0 \leq I_k \leq \frac{1}{k+1} \Rightarrow$

$$0 \leq \lim_{k\to+\infty} I_k \leq 0 \Rightarrow \lim_{k\to+\infty} I_k = 0$$



Qarray.tn -Aqra Blech- Qarray.tn